

This Listing of Claims will replace all prior versions, and listings, of claims in this application:

Listing of Claims:

1. (Amended) An isolated polynucleotide molecule comprising:
 - (a) a nucleic acid molecule encoding an aspartate kinase (ask) polypeptide;
 - (b) a nucleic acid molecule encoding an aspartate-semialdehyde dehydrogenase (asd) polypeptide; and
 - (c) a nucleic acid molecule encoding a dihydrodipicolinate reductase (~~dapB~~) polypeptide.
2. (Amended) The polynucleotide molecule of claim 1, wherein said polynucleotide molecule additionally comprises a nucleic acid encoding a complete or truncated diaminopimelate dehydrogenase (ddh) polypeptide, wherein said truncated ddh polypeptide has a length, measured in total number of amino acids, of at least 25% of the full length of a ddh polypeptide.
3. (Amended) The polynucleotide molecule of claim 1, wherein said polynucleotide molecule additionally comprises a nucleic acid encoding a complete or truncated ORF2 polypeptide, wherein said complete ORF2 polypeptide is encoded by a nucleotide sequence at least 95% identical to SEQ ID NO: 9, and wherein said truncated ORF2 polypeptide has a length, measured in total number of amino acids, of at least 25% of the full length of an ORF2 polypeptide.

4. (Amended) The polynucleotide molecule of claim 1, wherein said polynucleotide molecule additionally comprises a nucleic acid encoding complete or truncated ddh, complete or truncated ORF2 and complete or truncated diaminopimelate decarboxylase (~~lysA~~) polypeptides, wherein said truncated ddh polypeptide has a length, measured in total number of amino acids, of at least 25% of the full length of a ddh polypeptide, wherein said truncated ORF2 polypeptide has a length, measured in total number of amino acids, of at least 25% of the full length of an ORF2 polypeptide, wherein said complete ORF2 polypeptide is encoded by a nucleotide sequence at least 95% identical to SEQ ID NO: 9, and wherein said truncated diaminopimelate decarboxylase polypeptide has a length, measured in total number of amino acids, of at least 25% of the full length of a diaminopimelate decarboxylase polypeptide.

5. (Original) The polynucleotide molecule of claim 4, wherein said polynucleotide molecule additionally comprises a P1 promoter element of SEQ ID NO: 15.

6. (Amended) The polynucleotide molecule of claim 5, wherein said P1 promoter element is adjacent to said nucleic acid encoding ~~lysA~~ diaminopimelate decarboxylase.

7. (Amended) The polynucleotide molecule of claim 1, wherein said ask, asd and ~~dapB~~ dihydrodipicolinate reductase polypeptides are encoded by genes native to a cell of the genus Corynebacterium, ~~Brevibacterium flavum or Brevibacterium lactovermentum~~.

8. (Amended) The polynucleotide molecule of claim 1, wherein said ask and asd polypeptides are encoded by ~~the ask-asd operon of ATCC21529~~ an operon comprising a nucleotide sequence at least 95% identical to SEQ ID NO: 1 and a nucleotide sequence at least 95% identical to SEQ ID NO: 3.

9. (Amended) The polynucleotide molecule of claim 2, wherein said ddh polypeptide is encoded by a gene native to cell of the genus Corynebacterium, ~~Brevibacterium flavum or Brevibacterium lactovermentum.~~

10. (Amended) The polynucleotide molecule of claim 3, wherein said complete or truncated ORF2 polypeptide is encoded by a gene native to a cell of the genus Corynebacterium, ~~Brevibacterium flavum or Brevibacterium lactovermentum.~~

11. (Amended) The polynucleotide molecule of claim 4, wherein said diaminopimelate decarboxylase lysA polypeptide is encoded by a gene native to a cell of the genus Corynebacterium, ~~Brevibacterium flavum or Brevibacterium lactovermentum.~~

12. (Amended) The polynucleotide molecule of claim 1, wherein said dihydrodipicolinate reductase ~~dapB~~ polypeptide is encoded by a nucleotide sequence at least 95% identical to SEQ ID NO: 5 the coding region of the ~~dapB~~ gene of NRRL B11474.

13. (Amended) The polynucleotide molecule of claim 2, wherein said ddh polypeptide is encoded by a nucleotide sequence at least 95% identical to SEQ ID NO: 7 the coding region of the ~~ddh~~ gene of NRRL B11474.

14. (Cancelled).

15. (Amended) The polynucleotide molecule of claim 4, wherein said diaminopimelate decarboxylase lysA polypeptide is encoded by a nucleotide sequence at least 95% identical to SEQ ID NO: 11 the coding region of the ~~lysA~~ gene of ASO19.

16. (Original) A vector comprising the isolated polynucleotide molecule of claim 1.

17. (Original) A host cell comprising said vector of claim 16.

18. (Original) The host cell of claim 17, wherein said cell is a prokaryotic cell.

19. (Original) The host cell of claim 17, wherein the cell is a eukaryotic cell.

20. (Original) The host cell of claim 17, wherein said host cell is a *Brevibacterium flavum*, *Brevibacterium lactofermentum* or *Corynebacterium glutamicum* cell.
21. (Original) The host cell of claim 17, wherein said host cell is an *Escherichia coli* cell.
22. (Original) A method for transforming a host cell comprising:
- (a) transforming a host cell with the polynucleotide molecule of claim 1, wherein said isolated polynucleotide molecule is stably integrated into said host cell's chromosome; and
 - (b) selecting a transformed host cell.
23. (Original) A method for transforming a host cell comprising:
- (a) transforming a host cell with the polynucleotide molecule of claim 1, wherein said isolated polynucleotide molecule is maintained in said host cell as extrachromosomal DNA; and
 - (b) selecting a transformed host cell.
24. (Withdrawn) A method of producing lysine comprising culturing said host cells of claim 17 in a culture medium, wherein said host cells produce lysine into said culture medium.
25. (Amended) The polynucleotide molecule of claim 1, wherein said polynucleotide molecule does not comprise a nucleic acid molecule encoding any one of dihydrodipicolinate synthase (~~dapA~~), tetrahydrodipicolinate succinylase (~~dapD~~), N-succinylaminoketopimelate transaminase (~~dapC~~), N-succinyl-diaminopimelate desuccinylase (~~dapE~~) or diaminopimelate epimerase (~~dapF~~) polypeptides.

26. (New) The polynucleotide molecule of claim 7, wherein said bacterium is selected from the group consisting of *Corynebacterium glutamicum*, *Brevibacterium lactofermentum*, and *Brevibacterium flavum*.

27. (New) The polynucleotide molecule of claim 9, wherein said bacterium is selected from the group consisting of *Corynebacterium glutamicum*, *Brevibacterium lactofermentum*, and *Brevibacterium flavum*.

28. (New) The polynucleotide molecule of claim 10, wherein said bacterium is selected from the group consisting of *Corynebacterium glutamicum*, *Brevibacterium lactofermentum*, and *Brevibacterium flavum*.

29. (New) The polynucleotide molecule of claim 11, wherein said bacterium is selected from the group consisting of *Corynebacterium glutamicum*, *Brevibacterium lactofermentum*, and *Brevibacterium flavum*.